

IN THE CLAIMS

What is claimed is:

1. An electrosurgical pencil, comprising:

an elongated housing;

an electrically conductive element supported within the housing and extending distally from the housing, the electrically conductive element connectable to a source of electrosurgical energy; and

a sensor disposed within the housing and in electrical connection with the source of electrosurgical energy, the sensor detecting movement of the electrically conductive element and communicating a signal to the source of electrosurgical energy relating to the movement of the electrically conductive element, the source of electrosurgical energy supplying electrosurgical energy in response to the signal communicated from the sensor.

2. The electrosurgical instrument according to claim 1, wherein the sensor for detecting movement of the electrically conductive element is at least one of accelerometers, optical positioning systems, radiofrequency positioning systems, and ultrasonic positioning systems.

3. The electrosurgical instrument according to claim 1, wherein the electrically conductive element includes a longitudinal axis defined therethrough and the sensor detects at least one of an axial movement of the electrically

conductive element along the longitudinal axis, a transverse movement across the longitudinal axis of the electrically conductive element and a rotational movement about the longitudinal axis of the electrically conductive element.

4. The electrosurgical instrument according to claim 3, wherein the source of electrosurgical energy transmits a dissecting RF energy output in response to the detection of axial movement of the electrically conductive element along the longitudinal axis.

5. The electrosurgical instrument according to claim 3, wherein the source of electrosurgical energy transmits a hemostatic RF energy output in response to the detection of transverse movement of the electrically conductive element across the longitudinal axis.

6. The electrosurgical instrument according to claim 1, wherein the sensor is at least one of a differential parallel plate accelerometer, a balanced interdigitated comb-finger accelerometer, an offset interdigitated comb-finger accelerometer, and a film-type accelerometer.

7. The electrosurgical instrument according to claim 6, wherein the sensor includes:

a first accelerometer for detecting a movement of the electrically conductive element in an axial direction along the longitudinal axis; and

a second accelerometer for detecting movement of the electrically conductive element in a transverse direction across the longitudinal axis.

8. The electrosurgical instrument according to claim 7, wherein the first accelerometer is configured and adapted to transmit an output signal to the source of electrosurgical energy corresponding to the axial movement of the electrically conductive element; and the second accelerometer is configured and adapted to transmit an output signal to the source of electrosurgical energy corresponding to the transverse movement of the electrically conductive element.

9. The electrosurgical instrument according to claim 7, wherein each of the first and second accelerometers is at least one of a differential parallel plate accelerometer, a balanced interdigitated comb-finger accelerometer, an offset interdigitated comb-finger accelerometer and a film-type accelerometer.

10. The electrosurgical instrument according to claim 7, wherein each of the first and second accelerometers includes at least one piezoelectric film motion detector.

11. The electrosurgical instrument according to claim 1, wherein the source of electrosurgical energy substantially reduces the supply of electrosurgical energy when the sensor does not detect at least one of:

movement of the electrosurgical pencil for a predetermined period of time;
and

movement of the electrosurgical pencil above a predetermined threshold level of movement.

12. The electrosurgical instrument according to claim 11, wherein the source of electrosurgical energy substantially increases the supply of electrosurgical energy when the sensor detects at least one of:

movement of the electrosurgical pencil following the predetermined period of time; and

movement of the electrosurgical pencil above the predetermined threshold level of movement.

13. The electrosurgical instrument according to claim 3, wherein the source of electrosurgical energy substantially reduces the supply of electrosurgical energy when the sensor does not detect at least one of:

movement of the electrosurgical pencil for a predetermined period of time; and

movement of the electrosurgical pencil above a predetermined threshold level of movement.

14. The electrosurgical instrument according to claim 13, wherein the source of electrosurgical energy substantially increases the supply of electrosurgical energy when the sensor detects at least one of:

movement of the electrosurgical pencil following the predetermined period of time; and

movement of the electrosurgical pencil above the predetermined threshold level of movement.